

### **ABSTRACT OF THE DISCLOSURE**

**[0071]** The present invention provides a microchip for performing electrophoresis with pulsed amperometric detection (PAD) for the separation and detection of underivatized carbohydrates, amino acids, sulfur-containing antibiotics, *etc.* PAD allows for the direct detection of amines, thiols, alcohols and carbohydrates and therefore is a useful technique for the development of electrochemical detection for microchip electrophoresis.